

What is claimed is:

1. A time synchronization system comprising:

a GPS (Global Positioning System) receiver for receiving a time signal from a Global Positioning System (GPS), and outputting a UTC (Universal Time Coordinated) synchronization reference pulse signal synchronizing with UTC and a UTC synchronization absolute time signal composed of a serial signal representing an absolute time; and

a time signal distributor for generating a reference time signal by synthesizing the UTC synchronization reference signal and the UTC synchronization absolute time signal, and transmits this reference time signal in distribution to a plurality of distributed control oriented terminal devices.

2. A time synchronization system according to claim 1, wherein said time signal distributor synchronizes a rising edge of the UTC synchronization reference signal with UTC, and transmits the time synchronization signal to each of said terminal devices with a fixed period.

3. A time synchronization system according to claim 1, wherein said terminal device includes a reference clock operating in synchronization with the rising edge of the UTC synchronization reference signal, for generating a time signal representing a time on the finer order than a minimum time unit that is processed in the UTC synchronization absolute time signal, and internal clock correction means for comparing an internal time value based on said reference clock with an external time value synchronizing with the UTC synchronization reference signal, and correcting said reference clock so that the time of said reference clock synchronizes with the UTC synchronization reference signal.

4. A time synchronization system according to claim 3, wherein said internal clock correction means includes means for changing a unit delimiting width of the correction, corresponding

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to a magnitude of a time difference.

5. A time synchronization system according to claim 1, wherein if impossible of receiving the UTC synchronization time signals from an internal reference signal generator for generating an internal reference signal synchronizing with the UTC synchronization reference signal, an internal absolute time signal generator for generating an internal absolute time signal equal to the UTC synchronization absolute time signal and the GPS receiver, said signal synthesizing unit of said time signal distributor generates an internal time signal by synthesizing the internal reference signal and the internal absolute time signal, and transmits this internal time signal as a substitute for the reference time signal in distribution to said respective terminal devices.

6. A time synchronizing system according to claim 5, wherein said time signal distributor, if impossible of receiving the time signal from said GPS receiver, synthesizes the internal time signal so that the internal reference signal and the internal absolute time signal are not overlapped in time.

7. A time synchronizing system according to claim 1, wherein each of said terminal devices includes an internal clock and, if unable to receive the reference time signal from said time signal distributor, continues a time signal process by use of said internal clock.

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